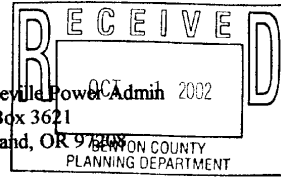


Benton County Planning Dept
1002 Dudley Ave
Prosser, WA 99350

Benton County Building Dept
5600 Canal Dr
Kennewick, WA 99336

Bonneville Power Admin
PO Box 3621
Portland, OR 97208



RE:

PLYMOUTH ENERGY WANTS to build a natural gas-power plant a couple miles west of Plymouth, northeast of an existing power plant.

Benton county planners have finished their environmental impact statement regarding the project. And, they want your comments on the plan. Copies of the DEIS available.

Response by: Elmer Eugene Ayers

I have lived in the area here since 1975 January and have worked mainly as a Pipefitter and welder for those years. As I see it we need many small units producing electricity for our farmers and businesses and support facilities of these businesses and for the bedrooms that house the workers in our area. We need electricity for many varied and quite a number of electronic items in our lives and it needs to be uninterrupted as we have been blessed with from our PUDs in the area. We need this addition to our supply available and to sell to California and other places as needed thus we serve the whole north west as well as this great country of ours.

If we have many small facilities then it is harder for our enemy to cut us off or be cut off because of natural disasters. Also they can have shut downs that effect a smaller part of our sources instead of one shut down for maintenance effecting a very great part of our sources. It also can effectively give a better competition between the competing companies of electric generation. This verses a single source and no competing companies as is Bonneville Power Administration.

The location is good for a varied number of reasons. It is Washington build and operated and can from that placement geographically easily serve on shorter lines to Hermiston area and south to Tri Cities area and beyond and to Walla Walla vicinity. Also it can promote the development of small industries to settle in the Plymouth area on the Washington side of the Columbia vs the

RESPONSE TO COMMENT I-1

Comment Acknowledged.

I-1

Oregon side. Benton county will reap good benefits for its farmers on their needs now and future for the electric pumps and other devices in this desert region needed to operate a large industry of farming and it is expanding all the time. This also serves the tourist and those coming here for conventions and other meetings as well as the sports activities that are continuing to expand all around us in our cities.

We need this in summary because it is the right thing to do.

We need this and where it is at because it fits as part of a bigger package of a lot of small units working in concert to meet our needs.

We need this because some one else will do it in Oregon and then we miss the tax base and control that we should have for our people.

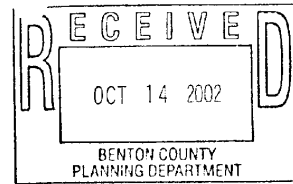
We need this to add to the overall countries and NW needs for future power and varied sources in case of emergency whether natural or enemy caused or for maintenance purposes.

Thank you for listening to my opinion and I do hope this helps in your decision making process.

I-1
(cont.)

Elmer Eugene Ayers
907 w Park st
Pasco, Wa. 99301

October 10, 2002



My name is Linda Marcum and I am a resident of Plymouth, Wa. the proposed site for the new Plymouth Energy generating facility. After reviewing the DOE/EIS I have formulated some points of concern. I want to thank you in advance for taking the time to read my concerns.

All of the following concerns are expressed in order of my personal evaluations and prioritized from highest concern to least concern.

1) Air Quality

Section 3.2-11 states that there are no controls available to control emissions of PM 10 or SO₂ from combustion-turbine power plants. The release of nitrogen oxide, sulfur dioxide and particulate matter is of upper most importance to me. Having health problems related to breathing air, I feel that I need to be ASSURED that I will not be exposed to anything that may alter my way of life here in Plymouth, and my ability to enjoy a clean air environment. This I do not feel is adequately addressed. In section 3.14-1 it is stated, that further development of the area in mention, especially in an industry such as power production, may produce air emissions that could potentially affect air quality. Along with this, we should consider air visibility as it coincides with air quality. Regional haze in the model suggests that the proposed project could potentially degrade visibility. In the 24 hour extinction, relatively higher concentrations near the facility were caused by the PM₁₀ emitted directly from the turbines. Also, secondary aerosols formed through the conversion of the NO_x and SO₂ are important components of the extinction. While air movement is a consideration and should be taken into fact finding, my understanding of this is limited and I would like further information. A thinking person would assume that the emissions of aerosols and other components would not only directly affect the haze and viewing problem, but the air quality as well. While the air quality is in question it does not only affect the human population, but wildlife as well.

- 2) The source of elevated nitrates was not addressed in the Ecology report. Why was that?? The use of fertilizers, and other possible hazardous materials that may affect drinking water is of importance to me. Listing possible sources is not good enough. This needs further research with the findings made public.

RESPONSE TO COMMENT I-2

The discussion of emissions from the PGF acknowledges that the project would generate air pollutants, but the concentrations of air pollutants in the exhaust would be very low because combustion of natural gas is relatively clean and because Best Available Control Technology would be applied to minimize air pollution. The dispersion modeling analysis summarized in the Draft EIS indicates that predicted concentrations would be far below the ambient air quality standards that have been established to protect human health. Consequently, no adverse health effects attributable to air emissions from the PGF are expected.

RESPONSE TO COMMENT I-3

A regional visibility impact assessment was conducted for the Draft EIS, and the results of this assessment were included in Chapter 3.2 and Appendix B of the EIS. The assessment considered both directly emitted particulate matter and secondary aerosol formation. Results of the assessment indicated that PGF emissions would have a minimal impact on visibility. See also Responses to Comments A-1 and A-2.

The air quality modeling of emissions attributable to PGF revealed predicted concentrations that were comparable to or less than those deemed insignificant under EPA's PSD permitting procedures. Predicted concentrations were small fractions of the ambient air quality standards established to protect human health and welfare. Since air quality laws are designed to protect humans, consideration is given to at-risk populations and sub-lethal effects. It is reasonable to assume that protection of humans in this manner will also protect wildlife. There are no studies that indicate otherwise.

RESPONSE TO COMMENT I-4

As discussed in Section 3.3.1.1.2 of the Draft EIS, groundwater sampling revealed that existing nitrate levels in the groundwater near the plant site exceed drinking water standards. A report prepared by Ecology concluded that elevated nitrate concentrations are present in groundwater in many areas of the mid-Columbia River Basin, which includes Benton

3) Public Services and Utilities

On summary page 1-11 it states that impacts from the PGF would not be significant. A potentially significant cumulative impact on public services and utilities could occur because of additional daily or weekly population in the region ie: construction workers on other projects, thus placing a higher demand on services such as law enforcement, fire protection and emergency services. It is very apparent to anyone that lives here in Plymouth, that police response times are dreadful and very lacking. As an unincorporated area, we are not high priority. The volunteer fire dept is very effective as just that. With additional construction occurring in the Tri Cities area, I strongly disagree that response times will not be affected, as they are poor now from the police especially. 3.12-1 states that one deputy patrols the Plymouth area 40 hours a week. With the influx of construction that is not enough. With response times lacking from the TriCities, it is likely that additional traffic accidents will occur and a rise in additional civil problems, citations, burglaries and other service calls would occur. More people more problems.

During construction it is stated on 3.12-7 that aprox. 222 additional workers would enter and leave the site area. This increase shows that our police coverage would be less than adequate for the construction alone. The residents and their concerns would be overlooked with the added volume of people during construction. The DOE/EIS does not adequately address this problem. It states on one hand, that the impact will be minimal yet shows the opposite. Since the socioeconomics impact on the citizens of Plymouth is not a consideration, additional law enforcement is highly unlikely and a concern for me as a citizen of Plymouth.

4) Transmission Lines

On 1-17, impact of the transmission interconnection, it is stated that the interconnection may necessitate some removal of crops within Plymouth Farm and agricultural property north of the farm. Plymouth Farms in the past has removed and burned on a windy day, acres of trees. Particulate matter was sent into the air affecting my breathing so much that I had to stay in the house with windows closed. At the very least a calmer day should have been chosen. I called the air quality authority to complain, and in usual fashion nothing was done. I would like to see Plymouth Farms and Plymouth Energy, be required to be more aware of the weather conditions and the feasibility of another way to remove crops should that be necessary, that not only affect my way of life, but that of others around me, including wildlife.

It is also stated that property owners would be consulted when construction of transmission lines is about to begin. We all want the area to remain unchanged environmentally as well as aesthetically as much as possible.

I-5

County. Although the source of the elevated nitrate concentrations was not discussed in the Ecology report, increased nitrates are often attributable to agricultural use of fertilizer and discharges from septic systems.

Construction of the PGF would not affect the quality of groundwater, as stated in 3.3.2.2.1 of the Draft EIS. During PGF operation, the use of a septic system would create the potential for nitrate loading to the groundwater at the plant site. The nitrate concentration in the groundwater at the site would increase approximately 0.9 percent in the immediate vicinity of the drainfield, determined to be a low-to-moderate (less than significant) impact, as discussed in Section 3.3.2.2.2.

RESPONSE TO COMMENT I-5

Section 3.12 of the Draft EIS describes existing police, fire and emergency medical service (EMS) capability in the regional and site area. Emergency service responders expect an increase in traffic and other incidents due to the proposed project, but do not expect substantial increases in demand on their services because (1) no detours or road closures would occur during construction, so delays in responding to incidents are not expected, (2) the traffic level of service (LOS) would remain at its current level during project construction, so traffic delays and volumes would not differ substantially, and (3) the peak construction period would not occur during winter when the number of accidents typically increases due to poor driving conditions. Section 3.12.3 of the DEIS discusses the cumulative impacts on public services from projects in the vicinity. The influx of workers and overlapping construction periods would likely increase the need for public services.

I-6

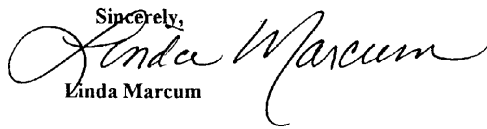
RESPONSE TO COMMENT I-6

The comment includes reference to heavy dust episodes during past orchard removal at Plymouth Farms. Development of the PGF would not entail removal of additional orchards. It would require removal of surface vegetation and grading of the planned PGF project site. Vegetation removal and grading would include dust suppression methods such as watering to minimize and fugitive dust emissions. See discussion in Sections 2.2.8.2 and 2.2.8.3 of the Draft EIS.

5) Erosion

Wind erosion will be a big problem. Once construction has begun, wind currents will be in play and soil (sand) will blow everywhere. 3. 1-28 states that once soil is disturbed, the most critical time for erosion is from March to May, however I disagree with that assumption as it does state later in the paragraph. Erosion by storm water runoff would be greatest during the rainy season. In general, it states that impacts from erosion will be significant. I agree with this statement and hope that Plymouth Energy has a plan in place to manage and implement procedures as needed especially during construction. I would like to see some vegetation replanted to not only visually help the plant appear more "natural" while minimizing the erosion process.

In summary, all the concerns expressed above are mine alone. Keeping in mind the need for alternate energy sources, I am ambivalent about this project's contribution to that effort. It will surely not contribute added electrical use by the citizens of Plymouth, as the finished product will be sold and exported out of the area. The BPA has shown that it is greatly mismanaged with no plan in place to rectify the problems within its own boundaries. Raising costs to cover ineptness does not solve the problems at hand. I do not see the need for a new generating plant at all, when the ones currently in place are so badly administered. NESCO dba Plymouth Energy has entered into an agreement with the BPA as well as others, to supply a finished product. The gain is theirs and has no advantage for the people of Plymouth, with the exception of new jobs. In researching NESCO's projects that have been completed, it appears that they try very hard to work with the local people and make every attempt to meet or exceed the DOE requirements. State parameters I feel are lacking but in the final analysis, the guidelines are set, and may not be conducive to the wishes of the population. I am hoping that this is the only plant of its kind in our area. Continued industrial development of this kind is great for Benton County, however not for the unincorporated town of Plymouth I feel. Continuous monitoring of the progress on this facility and any future projects is the only way to assure that the quiet, pleasant way of life I seek is not disturbed for the advancement of outside monetary gains.

Sincerely,

 Linda Marcum
 Plymouth, WA resident

RESPONSE TO COMMENT I-7

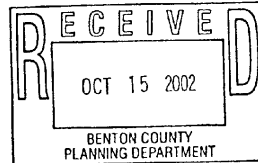
The project site is in a relatively arid area with annual rainfall on the order of 8 inches. In addition, soils at the project site and surrounding environs are sandy underlain by gravels that promote good drainage. Relatively little surface water runoff that could promote soil erosion is expected. The project grading plan will include surface water control features to control and channel runoff to a storm water pond for percolation (see Figure 2-4 and Section 3.3 in the Draft EIS).

RESPONSE TO COMMENT I-8

Comment acknowledged.

John Williams
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October 14, 2002
by FAX to:
Benton County Planning
Michael Shuttleworth
509-786-5629



COMMENTS ON THE DEIS FOR THE PLYMOUTH POWER PROJECT

These comments are submitted on behalf of Washington State Association of Plumbers and pipefitters, and WE CARE (Workers for the Environment, Clean Air, Reliable Energy), and certain members of these groups, who live in and near Benton County, the proposed Plymouth Power plant and its related natural gas pipeline and transmission line.

EXECUTIVE SUMMARY

The BPA and Benton County issued a Draft Environmental Impact Statement (DEIS) for the project. The Commentors believe the DEIS is inadequate, and an revised draft environmental impact statement should be prepared instead. The Department of Ecology, Federal Energy Regulatory Commission, and other state and federal agencies should be cooperating parties in preparation of the revised DEIS.

The BPA and Benton County's environmental review did not adequately consider cumulative air quality impacts. Many new power plants and industrial facilities have recently started up, are under construction or are seeking permits within about 150 miles of Plymouth Power.

We think that an environmental impact statement (EIS) should comprehensively consider the cumulative impacts, especially air quality, from all of these plants, rather than piecemealing them one by one in separate reviews.¹

The Commentors have identified several issues, including the failure to consider and describe all

¹ Many of the nearby pending power plants are described in the Washington State Energy Facility Siting Evaluation Council (EFSEC) website, such as the permitted Wallula facility

RESPONSE TO COMMENT I-9

The lead agencies believe that the Draft EIS provided sufficient information so as to adequately inform the public about the proposed project and its potential impacts, as required under NEPA and SEPA. The Draft EIS provided meaningful analyses of all significant issues related to the proposed project, and comments submitted during the Draft EIS public review period have not resulted in significant changes to the Draft EIS (see Chapter II of this Final EIS for revisions made to the Draft EIS). Thus, circulation of a revised draft EIS is not necessary. Also see Response to Comment I-14.

RESPONSE TO COMMENT I-10

See Response to Comment A-1 and A-2.

RESPONSE TO COMMENT I-11

Cumulative impacts were considered for each discipline and in Section 3.14 of the Draft EIS. Alternative sites and designs for the PGF plant were considered and are discussed in Section 1.5.3 of the Draft EIS. Global warming is discussed in Response to Comment I-35. Plant and pipeline accidents are discussed in Responses to Comments I-25 and I-26, and toxic air emissions are discussed in Responses to Comments A-1 and A-2, as well as in Section 3.2, Air Quality, of the Draft EIS. Water use and farmland are discussed in Sections 3.3, Water, and Section 3.8 of the Draft EIS.

I-9

I-10

I-11

of the project's direct, indirect, and cumulative impacts, and the failure to consider the environmental advantages of alternative sites and designs for the power plant.

The DEIS dealt inadequately with global warming, power plant and pipeline accidents, toxic air emissions, water use, and losses of farm lands.

Project alternatives that were not adequately considered, include redesign to produce less air pollution, reconfiguration to reduce water use, and reduction of the amounts of surface disturbance caused by development of the plant site, and the pipeline and transmission line.

TEXT OF DISCUSSION PURPOSE AND NEED

The DEIS misleads the reviewer with an inaccurate purpose and need statement and its outdated summary of the energy supplies in the Northwest. The DEIS says the WECC predicted increased electrical demand in an undated document, presumably before 1999, and claims that the NPPC, in 2000, claimed there could be black-outs in the Northwest ("generation insufficiency events") without 3000 more MWs of energy on line by 2003.

After citing these two or three year old studies, the DEIS then claims that "...consumers in the Pacific Northwest ... need increased power generation..."

If this claim was even true, it rings hollow today. The facts are that the WECC's more current data shows that the Northwest's generating capacity is already predicted to increase by 3100 MW by 2003 to over 81,000 MW, compared to the needed reserves of only 65,600 MW, and that energy demand actually fell from 8-11% from 2000 to 2001. (WECC, 2002 Information Summary).

As for the NPPC, it now predicts that the needed 3100 MW will be added by December, 2002, in its Power Supply Outlook, May, 2001-April, 2002.

We know of over 2000 megawatts recently added to the Northwest grid: Hemiston Power Partners, Rathdrum Generation, Klamath Falls Cogen, the Hanaford turbine, and Frederickson II, along with upgrades at Puget Sound Energy/Fredonia, and smaller turbines added at Willamette Industries and elsewhere.

There are also at least another 2000 megawatts under construction; Goldendale Energy, Miriam Mint Farm, Satsop I, Chehalis Power, and Coyote Springs II, along with another 3500 Mw that are virtually or actually fully permitted and/or are declining to start construction; Garnet Energy, PGE/Tacoma, Tahoma Energy, Umatilla Generating, Wallula, Sumas II, The Cliffs, Garnet Energy, and Everett I & II.

In other words, even if there was a 3000 Mw shortfall predicted three years ago, that gap has been more than filled. In fact there is now a glut of natural gas fired energy. There is no

I-11
(cont.)

I-12

RESPONSE TO COMMENT I-12

The need for the proposed action is discussed on pages I-1 to I-2 of the Draft EIS and in Chapter I of this Final EIS. While some regional power need projections may have been updated in recent months, BPA reasonably believes that there is still a need for increased long-term power production in the region. For example, BPA's latest energy projections forecast that the Pacific Northwest region faces a firm energy deficit of approximately 7,125 average megawatts (aMW) by 2011 if no new resources are developed. *Pacific Northwest Loads and Resources Study* ("White Book"), BPA 2002. In addition, the WECC 10-year Coordinated Plan Summary for 2002-2011 (WECC 2002) mentioned by the commentor assumes a certain amount of regional power growth from projects such as the proposed action. The WECC also notes that several factors combine to make forecasting generation adequacy for the Northwest Power Pool Area difficult for this time period. These factors include the variable and uncertain reduction of hydropower production from implementation of the 2000 Biological Opinion and the constantly fluctuating number of non-hydro generation interconnection requests (and corresponding power generation capacity) received by BPA. Northwest Power Planning Council (NPPC) projections are similar to WECC projections in that they assume certain projects, such as the proposed action, will be built to reduce the long-term need for power in the region; without the construction of these projects, the accuracy of these projections is likely less valid.

Thus, the projected adequacy of generation supply in the Northwest over the next 10 years still is directly dependent on how many of the numerous projects assumed to be built under these projections, such as the Plymouth Generating Facility, are actually built. While some new generation plants have been built, many others that were expected to be built (and included in WECC and NECC projections as assumed to have been built) have recently been cancelled or put on hold due to current market conditions and the slowing economy. In addition, BPA must make decisions based on long-term projections. In the Pacific Northwest, the overall, long-term trend is one of growth, which is expected to

evidence that the market can support another facility. The Mint Farm and Satsop 1 plants have had their construction recently terminated when the plants are more than half built, and Goldendale Energy has now delayed completion of their plant for another year.

Another dozen plants have recently withdrawn or delayed their proposals, such as Mercer Ranch, Turner Energy, Grizzly, North Idaho Power, Kootenai Power, Morrow Generating, Coburg Energy,

In other words, the Purpose and Need Statement for the DEIS is outdated and inaccurate. Proceeding to permiting of this plant runs the risk of committing and squandering public agency staff and the public's time, and natural resources, land uses, and investment capital, for a power plant that is not needed in the foreseeable future.

In this light, it is likely that the developer does not actually seek to build a power plant, especially since the EIS does not disclose the actual existence of a real power sales contract. Instead, it is more likely that the developer is merely seeking completed environmental permits, which will then be sold in the future to another developer, when balance is restored in the power market. We object to the misuse of staff time by the public agencies, and by the public, who must carefully review this project to insure that unnecessary environmental degradation does not occur. Staff time and the public's time should be reserved for "real" projects, not hypothetical projects that have an unlikely prospect of coming to fruition.

These recent facts also mean that the conclusion on page 2-1, that the No Project alternative would "not remove the need for power production" but would merely move the need to another site, is also inaccurate. The power plant construction boom of the last two years has already removed the need for power production, no matter if the No project alternative is selected.

AGENCY COOPERATION URGED

Several other local and federal agency approvals may be needed for this project, including the Federal Energy Regulation Commission, and the Department of Ecology. These entities should participate as cooperating agencies in a joint NEPA/SEPA EIS, rather than having the BPA and Henton County go it alone with a truncated DEIS. This type of agency cooperation is a cornerstone of efficient environmental review.

For instance, NEPA urges federal agencies to seek a cooperative posture with state agencies, in its section titled Elimination of duplication with State and local authorities (40 CFR 1506.2 (b):

"(Federal) Agencies will cooperate with State and local agencies to the fullest extent possible to avoid duplication between NEPA and State and local requirements."

A joint NEPA/SEPA document could study all of the power plants and large industrial projects that are proposed along the Columbia River, which are in fact directly and indirectly the result of BPA's policies and concentrations of resources, and could study these cumulative impacts, and

I-12
(cont.)

I-13

I-14

I-15

I-16

continue into the foreseeable future. Basing decisions on short-term slow growth periods does not correspond appropriately to the more frequently occurring periods when the regional economy is growing and the demand for electricity increases. Therefore, BPA does not believe it would be wise to rely on the present slow down in the economy as a significant factor in fully assessing future demand. Because long-term forecasts still show a projected need for additional power in the region, BPA believes that there is sufficient need for the proposed action. The discussion of the need for the proposed action has been revised to reflect more current projections (see Chapter I of this Final EIS).

Reference:

Western Electricity Coordinating Council (WECC). 2002. 10-Year Coordinated Plan Summary, 2002-2011: Planning and Operation for Electric System Reliability. Salt Lake City, Utah. September.

RESPONSE TO COMMENT I-13

The lead agencies have an obligation to consider applications submitted for projects such as the proposed action, and the preparation of the Draft EIS reflects this consideration. A project must go through regulatory and environmental review before the responsible agencies can grant approval to a proposed project. Project developers are often unable to enter into power sales contracts until after permits authorizing construction of the facility are obtained. The regulatory process determines if a project, such as PGF, meets the requirements for construction and operation. It is not the purpose or the intent of regulatory review to determine if a project proponent will build the project. Many different factors, including market conditions, influence whether a project will be completed.

RESPONSE TO COMMENT I-14

Please see Response to Comment I-11.

appropriate mitigation measures, in a single comprehensive document. This type of review would provide a more useful analysis of these impacts and meaningful mitigation measures.

This approach could advance a unified mitigation approach to air quality impacts, as suggested by the Federal Land Management agencies in their comments on the Wallula EIS. Impacts should be required where practicable and feasible, as mandated by the courts and CEQ regulations.

The four and one half page discussion of cumulative impacts at Section 3.14 does not do justice to the existing and impending cumulative impacts, and does not even list all likely significant projects, neglecting to even list the Umatilla Depot incinerator, the Pacific Rim Ethanol plant, the Cliffs power plant at the Goldendale Smelter, and the expansion of the Boise/Wallula pulp and paper mill, among other developments.

CUMULATIVE IMPACTS

This is one of several power and large industrial projects already operating, being proposed, constructed, or which recently began operation within a 100 mile radius of the proposed site, in the Columbia River valley, and Gorge vicinity. These include several natural gas fired plants, and of the Boardman coal fired plant. There will be cumulative air quality impacts, especially from added oxides of nitrogen (NOX) emissions. About 2000 ton/year of NOX, and about another 2000 tons/year of other pollutants, will soon be added to this local air shed from these proposed or recently constructed facilities. This area's air quality is already degraded, according to the Federal Land Managers IMPROVE air monitoring program.

The DEIS acknowledged this significant cumulative impact at 3.2-19 from the new generation of power plants in eastern Oregon and Washington. However, this analysis did not cite previous certifications from the Federal Land Managers that air quality in this vicinity was already significantly degraded.

The coal fired power plant less than 100 miles away, which is permitted to emit over 17,000 Tons/year of NOX emissions, along with other nearby existing NOX sources such as compressor stations, and pulp and lumber mills, and chemical plants, were apparently not included in the DEIS cumulative air quality impact analysis. Nor did the charts in Appendix B even include all likely proposed power plants, and other proposed large sources of NOX and other air pollutants in the vicinity.²

CUMULATIVE AIR QUALITY IMPACTS

²The proponent of the Starbuck plant was misidentified at Pacific Power; it is Pennsylvania Power.

RESPONSE TO COMMENT I-15

I-16
(cont.)

BPA is undertaking the environmental review of the Proposed Action as the lead agency under NEPA. Construction and operation of the PGF must be approved under Washington State and local authority (Benton County) and requires environmental review under Washington's State Environmental Policy Act (SEPA). Benton County is the lead agency under SEPA.

I-17

Relevant local/state and federal agencies have been informed and participated in the process of preparing the Draft EIS, which is a joint NEPA/SEPA document. Notice of the intent to prepare an EIS was sent to local/state and federal agencies. These same agencies were invited to attend public meetings held on the project and comment on the DRAFT EIS. Comments on project scope and suggestions for preparation of the Draft EIS were received from Washington Department of Transportation, Washington Department of Ecology and Washington Department of Fish and Game. Informal consultation was conducted by the U.S. Fish & Wildlife Service and National Marine Fisheries Service and the Washington Historic Preservation Office was contacted. Comments on the Draft EIS were received from the EPA, U.S. Department of Agriculture (Forest Service) and several state and local agencies. None of these agencies has requested cooperating agency status in the preparation of the joint State/Federal EIS for the Plymouth Energy Project.

I-18

I-19

RESPONSE TO COMMENT I-16

Comment acknowledged. The suggested regional analysis of power plant and industrial development has not been proposed by BPA, and such a study is beyond the scope of this EIS for the action that is being proposed in this case. However, potential cumulative impacts from the proposed action and other projects in the region are discussed in Section 3.14 of the Draft EIS and by environmental resource for select resources. For example, cumulative air quality impacts are also discussed in Section 3.2.3 and Appendix B of the Draft EIS.

The DEIS failed to adequately describe the cumulative air quality impacts from the proposed Plymouth Power project, in combination with the many proposed, and recently constructed power plants, and industrial facilities, within a 100 radius of Plymouth, and along with other regional NOX sources.

There is a total of approximately 6000 TPY of proposed and existing NOX emissions in the vicinity of Plymouth Power, not counting the Boardman, Oregon power plant's emissions of 17,762 TPY. Few existing Washington sources are counted in this inventory, so this figure is drastically understated. An EIS should be prepared that would include a comprehensive NOX area inventory, including but not limited to the Washington sources that are not listed here.

SOME NEARBY NOX SOURCES

BOARDMAN POWER PLANT 17762 TPY (Tons per year) of NOX

This is a coal fired power plant near Boardman, Oregon.

COYOTE SPRINGS POWER PLANT

This plant, near Hermiston, Oregon, has one turbine emitting 287 TPY of NOX. It was permitted in 1995. A second turbine was permitted in 1995, which is under construction. It will emit another 287 TPY.

HERMISTON POWER PARTNERS

This plant was permitted for 270 TPY of NOX in 1995. Later permit amendments bumped them to 314 TPY. It is now operating.

US GENERATING

This 500 MW power plant, shows 270 TPY of NOX emissions. It was permitted about five years ago.

PIPELINE COMPRESSOR STATIONS

The Northwest Pipeline, and the Pacific Gas Transmission natural gas pipelines, both run through the Columbia River area. Both pipelines utilize several compressors/pumps that are large NOX sources, including the Roosevelt compressor station in Klickitat County.

PGET

NOX EMISSIONS (COMPRESSOR INVENTORY)

Lone:	621 TPY.
Kent	261 TPY
Starbuck	177 TPY
Wallula	85 pty

NORTHWEST PIPELINE

I-19
(cont.)

RESPONSE TO COMMENT I-17

The Draft EIS included two cumulative impact assessments. The assessment in Appendix B-1 evaluated the potential cumulative impacts on local air quality in Plymouth. The assessment in Appendix B-2 evaluated the potential cumulative impacts on regional haze (the most sensitive indicator of regional air quality).

Although the impacts from PGF alone are less than or only slightly over the concentrations deemed insignificant by EPA's Prevention of Significant Deterioration permit process, a local cumulative impact assessment was conducted to focus on the unprecedented increase in local power plant projects. The assessment focused on new power plant projects primarily because the pollutants emitted from gas-fired combustion turbines are the same and therefore had a higher potential for cumulative impacts. Emissions from the existing Boardman coal-fired power plant were included in this analysis because it is the largest air pollution source in the immediate area.

The comment mentions four proposed projects located west of the Cascades: the Umatilla Depot incinerator near Umatilla, the Pacific Rim Ethanol Plant in Moses Lake, the Cliffs power plant project near Goldendale, and Boise Cascade's expansion of its Wallula mill. Table I-17-1 identifies emission increases associated with these four projects and

Table I-17-1
Emissions (tons/year) and Locations of
Other Proposed Projects

	NOx	SO ₂	PM ₁₀	Distance	Direction
Boise Cascade	658	0	0	25	NE
Pacific Rim Ethanol	133	1	81	84	N
Umatilla	129	22	20	7	SSW
Cliffs	88	14	69	68	WSW
"Total 4 Projects"	1008	37	170	-	-
Boardman Power Plant	17,761	30,450	1,056	-	-
"Total 4 Projects" / Boardman	6%	0%	16%	-	-
Total "Cumulative projects"	19,576	30,665	2,339	-	-
"Total 4 Projects" / "Cumulative projects"	5%	0%	7%	-	-

Their pipeline runs along the Columbia from Clark County, Washington (Washougal) to Hermiston, and branches northeast towards Spokane, and southeast towards Boise. Oregon Department of Environmental Quality (DEQ) files states this pipeline has compressor stations every 50 miles. An Oregon DEQ emissions inventory did list the following nearby compressor stations:

Stanfield 15.2 TPY of NOX.
Meacham 585 TPY, according to their permit renewal in 1996.

There are other compressor stations along the pipeline route in Washington on the Northwest Pipeline, with large NOX emissions, including the Washougal and Klickitat/Roosevelt stations.

The NW pipeline compressor in Baker County, Oregon, increased its NOX emissions in 1997 from 131 to 257 TPY.

Compressor station known total: 2000-odd TPY of NOX, not counting Baker City, Plymouth, or Roosevelt. These compressor stations were not apparently included in the cumulative air impacts analysis.

OTHER EXISTING NOX SOURCES IN NORTHEAST OREGON AND SOUTHEAST WASHINGTON

NAME	NOX IN TPY
UW/Pullman	250
Boise/Wallula	658
Kinzua	153
Boise	>385
Boise	>250
Co-Gen II	187
	900-odd total

La Grande
Elgin
Prairie BPA and Benton County

Both of the smaller Boise facilities were significant NOX sources, that conducted several expansions and increased their NOX emissions, since 1984 to the present. Their actual NOX emissions are not known, since they did not get the required permits from DEQ prior to these expansions. The EPA has a Notice of Violation pending against both facilities. These two facilities did not submit to the PSD process--yet.

UNDER 100 TPY-NOX

Joseph Lumber	36	Joseph
Dee Forest	53	Hood River
Grant Western	38	John Day
Simplot	97	Hermiston
Lamb-Weston	70	Hermiston

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(cont.)

their locations relative to the PGF. Although the emissions associated with these projects are noteworthy, three of the four projects are located far enough away (25-84 miles) that there would be no discernible local air quality impact in Plymouth. The four plants are also located in different directions relative to PGF, so a wind that might bring pollution from one project toward Plymouth would carry pollution from the others away from Plymouth.

Furthermore, even if these project were in the same locale, their combined emissions are small (0-16 percent) compared to just one of the power plants included in the local cumulative impact analysis (the Boardman plant). Consequently, the increase in local ambient concentrations would be small even if the plants identified in this comment were local. If one compares the combined emissions from all four of the projects identified by Mr. Williams with the total emissions considered in the local cumulative impact assessment, the relative increase is even smaller (0-6 percent).

Considering the fact that the additional sources identified in the comment are located in different directions from Plymouth, that 3 of the 4 are more than 25 miles away, and that the increase in emissions over those already considered in the cumulative impact assessment is very small, it is unlikely that they would have a significant cumulative impact when combined with the PGF emissions. Therefore, additional cumulative impact analyses are not warranted.

The regional cumulative impacts assessment included the Cliffs project, as it was deemed by BPA as a power project likely to go forward. Consequently the cumulative impacts of PGF with the Cliffs project were evaluated in the Draft EIS. We note, however, that several large projects included in the regional cumulative impact assessment are on hold or have been canceled. Both Duke Energy projects at Satsop (totaling 1,300 MW) have been suspended, and it appears that development of the Wallula power plant project (1,300 MW) is unlikely because the options of purchase of the site property have lapsed and Emission Reduction Credits that were to be used have expired. Proposed emissions from PGF are approximately 25 percent of those proposed for the Wallula

300-odd total

PROPOSED NEW POWER PLANTS AND NOX SOURCES
WALLULA

This 1300 MW project will emit about 434 ton/year of NOX and 1400 ton/year of total criteria air pollutants, and another 380 ton/year of ammonia, which could contribute to another 1600 ton/year of secondary particulate formation.

CONFEDERATED UMATILLA TRIBES

This 1200 MW plant is a partnership between the Umatilla Tribe, the Port of Umatilla, a private developer, and the Eugene, Oregon Water & Electric Board. It is proposed for near McNary Dam and the BPA and Benton County of Umatilla in eastern Oregon, on Tribal land. Its air emissions will be similar to the Wallula facility.

GOLDENDALE SMELTER CLIFFS PROJECT

The BPA recently issued a ROD for a new turbine at this facility, which will emit about 100 TPY of NOx. This facility, and the Boise/Wallula Mill expansion was left off of the cumulative impact-air quality list in Chapter 3.14.

GOLDENDALE ENERGY

This 249 MW power plant will come on line in 2003, producing about 77 TPY of NOx.

AVISTA/LONGVIEW

This 300 MW plant will be across the street from the Weyerhaeuser mill. It will emit about 100 ton/year of NOX, and another 200 ton/year of other pollutants. Its construction was recently halted but it is about 70% complete.

UMATILLA AND MORROW GENERATING

This proposed plants by PG&E National Energy will generate about 1000 MW and produce about 500 TPY of NOx. The Umatilla plant is fully permitted.

PACIFIC RIM ETHANOL

This proposed alcohol refinery near Moses Lake will emit about 200 TPY of NOx and about 500 TPY of total criteria pollutants. It was not cited in the cumulative air impact analysis.

ALTERNATIVE SIZE

One alternative would be sizing the power plant to supply only the amount of electricity that is currently under contract in a power sales agreement. The DEIS does not say how much power is already obligated in a sales agreement. It is likely that the proposed power plant is larger than needed to supply any current sales agreement. Instead, the plant will market its excess electricity into the regional power grid. If the plant were smaller, it could still supply its contractual

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(cont.)

power plant or the Satsop plants. Development of several other projects considered in the regional analysis has slowed or been postponed. Consequently, the regional cumulative assessment overstates potential impacts from projects in the development stage.

RESPONSE TO COMMENT I-18

See Response to Comment A-1 for discussion about air quality impacts. The lead agencies are unaware of any “certifications” that the air quality in this area is degraded. Although there are concerns about usability degradation, existing air quality in the Plymouth area is generally good.

RESPONSE TO COMMENT I-19

Please see Responses to Comment I-16 and I-17.

RESPONSE TO COMMENT I-20

Results of the dispersion modeling completed for the proposed project indicate that the associated air quality impacts would not be significant, even with the size proposed. The PGF could be considered mid-size when compared to other combined cycle projects that have recently come on line or are being constructed in the Pacific Northwest. Other recent projects include:

Fredrickson (Pierce Co.) 248 MW

Mint Farm (Cowlitz Co.) – 319 MW (construction suspended)

Chehalis Generation Facility (Lewis Co.) – 520 MW

Goldendale (Klickitat Co.) – 248 MW (construction delayed)

Hermiston (Umatilla Co.) – 546 MW

Coyote Springs (Morrow Co.) – 260 MW

Larger projects including projects over 1000 MW have been proposed but have been deferred or canceled (e.g., Starbuck, Satsop 1 and 2, Wallula). Combined-cycle are among the most efficient at producing electrical energy and more efficient than simple-cycle power generation

I-20

obligations, but there would be less significant impacts, especially air emissions.³

ALTERNATIVE POLLUTION CONTROL-ELIMINATE AMMONIA THREAT

The power plant will store, and emit ammonia for use in their SCR air pollution scrubbing system. This present dangers to public health and to air quality. SCONOX is an alternative pollution scrubbing system that does not use ammonia. SCONOX should have been comprehensively discussed as an alternative to the proposed project.

BENEFITS OF SCONOX NEED TO BE CONSIDERED

The SCR system proposed for use by the Applicants results in a number of environmental problems that are reduced or eliminated with the use of SCONOX. These problems include: (1) hazards from accidental releases of the ammonia used in the SCR system during its transportation and handling; (2) the formation of particulate matter from the oxidation of SO₂ in the SCR catalyst; (3) the formation of particulate matter from reactions between ammonia and SO₂; (4) generation and disposal of the hazardous SCR catalyst at the end of its useful life; (5) inability to control NO_x and CO emissions during startups and shutdowns; (6) increase in NO_x from the use of dry low NO_x combustor.

SCONOX would produce greater control of NO_x and other pollutants, and eliminate ammonia emissions, and the threat of releases from storage and transport of ammonia. The EPA has recently ruled that SCONOX is considered technically "Available" for NO_x control on natural gas fired turbine power plants.

ALTERNATIVE DESIGNS TO FURTHER REDUCE WATER USE AND DISCHARGE

The proposed plant will use a combination of air and water cooling. Nonetheless, it will consume an average of over 600 gallons per minute of water, or about one million gallons per day. It will also discharge about 125 gpm.

Six hundred gallons/minute is a very high rate of water use for this size of power plant. Many power plants are designed to generate far more energy, while at the same time using far less water than is proposed for this plant. For instance, the proposed natural gas fired Chehalis power plant will generate more than twice as much energy, but will use only about one third as much water. It will be solely air cooled.

Many power plants are also able to function without discharging 125 gpm of waste water, also, including the applicant's Sumas I plant. The DEIS should have comprehensively discussed alternative designs of the facility that would reduce water use and discharge, as follows.

AIR COOLING

This alternative would include complete air cooling, rather than partial water cooling for the facility. The commenters are aware of many existing and proposed power plants that are solely

I-20 (cont.)

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facilities which are often developed in 50 or 100 MW projects. Further as plant size increases some additional increase in generation efficiency can be realized. The project proponent has proposed the use of a Siemens Westinghouse 501 F gas turbine which will produce 180 MW (or it's equivalent). The next smaller model gas turbine is the 501 D5A which produces 118 MW. The larger 501 F gas turbine combined cycle has a thermal efficiency of 52.5 percent. If the smaller 501 D5A gas turbine is substituted the cycle thermal efficiency drops to 49.5 percent. Thus the selected power plant is 6 percent more efficient than the next smaller size plant. Consequently the larger plant consumes 6 percent less fuel and emits 6 percent less air emissions per MW than would the smaller plant.

Project developers optimize project size and efficiency based on expectation of future market economics. A key objective in project formulation is to maximize generation efficiency and thus competitiveness. As non-utility generator, the project proponent must rely on being positioned in a competitive market as a low cost producer. This plant is designed to be a low cost producer of electrical power within the constraints of the site.

Since the proposed project has no significant impacts after mitigation and a smaller plant would not substantially reduce impacts, further consideration of project alternatives based on smaller project size was not warranted.

RESPONSE TO COMMENT I-21

While a detailed evaluation of air pollution control technologies is typically deemed too technical for an EIS, the Notice of Construction air quality permit application for the PGF addressed SCONOX. SCONOX is a developing technology that has been applied to small combustion turbines, but it has not been successfully demonstrated in commercial operation of large combustion turbines generating facilities such as PGF. Therefore, air pollution permitting agencies across the country have consistently selected Selective Catalytic Reduction (SCR) rather than SCONOX for NO_x control on projects such as PGF. SCR is capable of achieving the same guaranteed emission rate as SCONOX (2 ppm NO_x).

air cooled, including the two Neil Simpson plants and the Wyodak plant in Wyoming, the permitted Chichalls Power facility in the State of Washington, the Doswell facility in Virginia, the Matimba and Kerdal powerhouses in South Africa, the Rosebud plant in Montana, the Linden and Sayreville plants in New Jersey, Colorado Springs near Fountain, Colorado, Diamond Generating near Goodsprings, Nevada, Duke, and Miriant, both near Las Vegas, Reliant's Choctaw County projects near French Camp, Mississippi, and its Hunterstown, Pennsylvania, project, Taiyuan #2 in China, Trakya in Turkey, Uran III in India, Tosa in Iran, and the Camarillo facility in Ventura County, California.

In addition, most large power plants permitted recently in California have been exclusively air cooled, including Suiter Power, and Otay Mesa. Total Air cooling of the Plymouth plant could reduce water use by 70% or more.

HYBRID COOLING SYSTEMS

These plant designs use a combination of both air and water cooling, and are in use at the West Cogeneration plant in Germany, and the Exeter Energy plant in Conn., USA. Three Mountain Power in California is another hybrid cooled plant, as is Mass Power's Indian Orchard plant. Water use is cut approximately in half. While the Plymouth plant apparently proposes a variation of a hybrid system, its water use is still high, compared to other air cooled plants.

For instance, the Plymouth facility will use as much water to generate 304 MW, (1100 af/yr. or 673 gal/min) as will the Lakefield Junction plant in Minnesota, to generate over 600 MW. Diamond Energy's Nevada plant will use only 20-50 af/year to generate 500 MW, according to published accounts. Colorado Springs/Fountain will use only 80 gpm to generate 480 MW, compared to Plymouth Energy's 673 gpm, according to published accounts.

ZERO DISCHARGE PLANTS

These types of facilities extensively re-treat and re-use their waste water, often with the reverse osmosis membrane process. Public Service in New Mexico has employed this technology for over 20 years, as does the Massena, New York plant, Ocean State in Burrillville, Rhode Island, and FJ Gannon in Florida. There are several variations on this process, including brine concentration. We understand that HIPD plant, in Naperville, Illinois, uses this process. Staged cooling, used at Pasco in Dade County, Florida employs this alternative. We read that the developer's own Sumner plant is zero discharge.

WATER QUALITY AND QUANTITY IMPACTS

The DEIS at 2-27 states that there will be high levels of suspended solids in the project's effluent, and the waste water will have to be blended at a ratio of 10-1 before it can be used for irrigation. In other words, the project will require about 500 million gallons per year for diluting the polluted waste water from the power plant. This scheme of diluting the concentrated pollutants in the effluent, for use as irrigation, will require the permanent commitment of one-half billion gallons of irrigation water as a dilutant. This is a large and significant commitment of an important natural resource, water, in a highly arid area.

I-22
(cont.)

PGF proposes to employ urea or an aqueous solution as the source of ammonia for the SCR control technology. These options avoid most of the risks associated with the use of anhydrous ammonia.

There would be an increase in particulate matter emissions as a result of the SCR. This increase was included in the emission rates examined in the Draft EIS and the air quality permit application. Predicted concentrations were found to be less than or only slightly greater than concentrations deemed insignificant by EPA.

In addition, there is a degree of excess (unreacted) ammonia that is emitted from the stack of a power plant employing SCR. The proposed ammonia emission rate is half that typically proposed for similar projects. At the point of maximum impact, predicted ambient ammonia concentrations resulting from PGF are less than 5 percent of the toxic air pollutant criterion established by Ecology.

RESPONSE TO COMMENT I-22

The Applicant is proposing a hybrid cooling system that includes an air-cooled condenser (ACC) and a conventional wet/condenser wet tower cooling system. The project description describes that the condensing cooling load would be shared and balanced between the two systems to maximize cooling efficiency and minimize consumptive water use. During periods of cool temperature, the cooling load would be completely directed to the ACC. If the project were to rely solely on an ACC, plant electrical output would be reduced during periods of higher temperature and plant capital and operating costs would be increased. Since the project proponent has usable water available they have elected this composite cooling system to balance water use with loss of plant output and increase in costs. Since no significant environmental impacts would result from the consumptive water use required by the composite system, sole reliance on an ACC for plant cooling was not required.

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I-24

The DEIS should have discussed alternatives that would not require the commitment of this massive amount of water to dilute the contaminated effluent from the power plant.

The water tests in the DEIS at Table 2.1 did not present an analysis of the trace metals and radioactive materials that may be present in the cooling water. Even if these types of materials are present in very small amounts, they will be concentrated by 1000% by the cooling cycles, and this activity could produce a significant concentration of potentially toxic materials in the irrigation water. We are aware that the neighboring Columbia River water does contain measurable levels of toxic metals such as chromium and radioactive materials, and it is likely that the area's ground water may mirror the contents of the River water.

PIPELINE IMPACTS

The proposed power plant and its support facilities include a 800 foot long natural gas pipeline lateral (p. 2-25). There are many other natural gas pipelines around the country, and in the Northwest, that were constructed according to federal standards. But in the Northwest alone, pipelines have blown up three times within the last few years.

A pipeline just a few miles from here, near Bonneville Dam, recently exploded and burned on February 27, 1999. The roar from the explosion was heard for two miles. The 300 foot high fireball was so huge it was visible for miles. Route 14 in Washington was closed to protect the public. Press accounts state that earth movement from recent heavy rains may have been responsible for the pipeline break. The fire destroyed a resort hotel that was under construction and a nearby dwelling.

Near Kalama, Washington, a natural gas pipeline broke in February, 1997. Again, a 300 foot high fireball blazed into the sky. And just one day earlier, the same pipeline exploded and burned near Bellingham, Washington.

In March of 1995, that same pipeline had ruptured and blew up near Castle Rock, Washington. After that 1995 explosion, the company removed soil from 300 feet of the pipeline, to relieve any stress. But less than two years later, it blew up again. Again, soil movement was the cause of the pipeline breakage, according to published accounts.

There have been a total of at least ten large natural gas pipeline explosions, since 1978 in the Northwest, including other ruptures in Stevenson, Washington, La Grande, Oregon, and Montpelier, Idaho. All of these explosions have been on the Williams Pipeline system that will supply this proposed power plant.

A few years ago, a construction backhoe caused a leak in a Northwest Natural Gas pipeline recently in Rainier. Seventy five people were evacuated. There is other evidence regarding the potential impact on public health and safety from natural gas pipelines.

Earlier this year, at least six people were killed in a natural gas pipeline explosion near Carlsbad.

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RESPONSE TO COMMENT I-23

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Zero wastewater discharge system consists of equipment to reduce the contaminants in cooling tower and boiler blowdown and recycling wastewater. These systems reduce plant electrical output by increasing internal plant electrical loads. They also produce a sludge waste from the water treatment system that requires disposal and are not commonly used in power plants. No significant environmental impacts were identified from disposal of the cooling system blowdown by the method proposed by the Applicant.

Further, the PGF water supply would be obtained from groundwater sources formerly used for agricultural irrigation and wastewater flows returned to maintain agricultural production. While a zero discharge system would reduce water use, it would eliminate the return water made available by the project for continued support of agricultural operations.

Zero wastewater discharge is a technology that has valid applications. As with all technologies, there are times when its application is not appropriate. Zero wastewater is not the appropriate technology for this project. The project obtains a portion of its water from a fruit orchard. The water is used by the power plant and the power plant's wastewater is returned to the orchard where it is used as irrigation water in the orchards. The wastewater from this project is used to grow fruit trees. The plant concentrates minerals in the well water supply and discharges them as wastewater. If the mineral concentration of the well water were to increase (for some unknown reason) the plant will actually have to decrease the concentration ratio and consequently, discharge more wastewater, to avoid damage to the orchard.

The zero discharge concept is not valid when the wastewater has beneficial use.

RESPONSE TO COMMENT I-24

Please see Response to Comment I-22.

RESPONSE TO COMMENT I-25

The land-applied water would be industrial wastewater, and therefore would be subject to the Industrial Waste Discharge Permit, not drinking water standards. Additional water quality testing was performed in November 2002 on groundwater beneath the site and included trace metals and radioactive materials. Based on these new results, the concentrations of constituents in the blended blowdown (cooling water discharge) that would be applied to the farmland were calculated and are shown below on Table I-25-1.

As stated in Section 3.3.2.2.1 of the Draft EIS, an engineering report for wastewater land application would be prepared as part of the permit process. The engineering report would include evaluation of site area soils and irrigation requirements, process wastewater constituents, and a proposed crop plan (as part of the Industrial Waste Discharge Permit) for use of the dilute wastewater for irrigation. As part of this plan, a monitoring program would be implemented for the process wastewater and site soils to detect potential impacts before they become significant. With proper wastewater treatment, land application and monitoring, the impacts of wastewater application to the crops, soils and groundwater in the site area are expected to be less than significant. If in order to issue an Industrial Waste Discharge Permit, the Washington Department of Ecology requires a higher blending ratio, additional land owned by Plymouth Farm is available for application. See Appendix A in the Draft EIS for further information about the land application of wastewater.

RESPONSE TO COMMENT I-26

The commentor describes natural gas pipeline incidents, including incidents in Washington where a release of natural gas from an underground pipeline caused evacuation of local population, property damage and personal injury. The potential for pipeline accidents is governed by a number of factors including age of the pipeline, size and operating pressure, construction quality and impacts to the pipeline from third parties. Most of the Washington-based incidents described occurred on the main natural gas transmission lines (24 – 36 inch diameter) that (1)

**Table I-25-1
Inorganic Analysis, Cooling Water Discharge**

Parameter	Raw Water (Well #4)	Blowdown Water (10 cycles)	Weighted Average 10:1 Dilution, Fresh Water to Blowdown
Conductivity (um/cm)	393	3930	714.55
TDS	296	2960	538.18
Nitrate	29	290	52.73
Phosphorus	0.08	0.8	0.20
Ammonia Nitrogen	0.5	5	0.91
Aluminum	0.04	0.4	0.07
Boron	0.06	0.6	0.11
Barium	0.028	0.28	0.05
Calcium	18	180	32.73
Copper	0.011	0.11	0.02
Iron	0.005	0.05	0.01
Potassium	3.9	39	7.09
Magnesium	14	140	25.45
Sodium	22	220	40.00
Lead	0.01	0.1	0.02
Sulfur	20	200	36.36
Silicon	4.8	48	8.73
Tin	0.027	0.27	0.05
Strontium	0.18	1.8	0.33
Zinc	0.018	0.18	0.03
Gross Alpha (pCi/l)	13.88	138.8	25.24

Notes:

Units are in milligrams per liter (mg/L), unless otherwise noted

Other metals and radionuclides were not detected at reporting limits and were not used as part of this analysis

New Mexico, and another six were injured. Landslides in Ventura county, California ruptured several natural gas pipelines in February, 1998, again after heavy rain. Between 1965 and 1986, there have been 250 pipeline failures in the United States as a result of stress corrosion cracking, caused by a combination of water, soil types, and gas temperature within the pipelines.

Twenty-one people were killed during 1995 from natural gas pipeline accidents.⁴ A Transwestern Pipeline natural gas pipeline exploded on August 20, 1994 in New Mexico, near the Rio Grande River, damaging a bridge. An October, 1994 explosion of a pipeline in Torrance, California, injured 30. A December, 1989 pipeline rupture caused by a farmer's plow, triggered the evacuation of 600 people in Butler, Illinois.

In March, 1994, a natural gas pipeline exploded in New Jersey, killing and injuring scores of people and creating a 30 foot deep crater and a fire that destroyed eight buildings and severely damaged six more buildings.

All of these pipelines were constructed to federal standards, and monitored by federal agencies. The DEIS should explain, how with all the mitigation measures and careful engineering, pipelines, including facilities in Washington State, on the very pipeline that will service this power plant, can still blow up. When these events occurred in a populated areas, there may be heavy loss of life and property. These pipeline explosions are significant impacts. Additional protective measures should be discussed and implemented, and the problems that caused this explosion should be carefully explained at length in an revised DEIS.

But the DEIS did not discuss pipeline accidents, also known as "service incidents." A service incident is reportable if there is a gas leak causing a death or serious injury, gas ignition, over \$5000 in property damage, if it occurred during a test, if it required immediate repair, or if a portion of the line was taken out of service because of the incident.

An revised DEIS should be prepared to describe the likely scenario of service incidents on the pipeline serving the power plant, perhaps by describing several of the recent explosions on this pipeline and at similar pipelines.

Descriptions of a range of several recent incidents should be provided, so that readers and commentors can be apprised of the possible impacts of service incidents. This is appropriate because service incidents can be expected over a 50 year life span for these pipelines. The DEIS should also have discussed whether, and how local agencies in this rural area would respond to a pipeline explosion and fire.

POWER PLANT ACCIDENTS

The DEIS failed to discuss the potential for accidents and explosions at this proposed facility. On

⁴New York Times, 4/9/97, p. 1.

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(cont.)

transport large volumes of gas at operating pressures in the range of 2,500 psi., and (2) have long distance routes that cross the state. The proposed gas pipeline lateral from the Williams Plymouth Compressor Station to the PGF would be a natural gas distribution line approximately 800 feet long. The distribution line would be 8 inches in diameter and would operate at a maximum pressure of approximately 600 psi. The pipeline lateral route would be located in a rural area with no nearby population centers, and would cross a portion of the Plymouth Farm that will remain in agricultural use (an area between the compressor station and the PGF site). No occupied buildings would be constructed on or adjacent to the pipeline. Section 2.2.5 in the Draft EIS describes the proposed gas pipeline lateral in more detail.

The potential for an accidental release to any particular portion of a pipeline is statistically extremely low. This potential is further reduced by the fact that the lateral would be newly-constructed, and would be located in an area with controlled access and use, i.e., the Plymouth Farm minimizes the potential for unauthorized third party activities that could impact the pipeline. As noted in Section 2.2.8.4 in the Draft EIS (Construction Sequence – Gas Pipeline), the pipeline lateral would be constructed in accordance with federal Department of Transportation regulations, which set safety standards for pipeline design and construction that minimize the potential for pipeline failure and accidental release of natural gas. Construction of the pipeline lateral in accordance with these standards, together with the pipeline's rural location, the absence of adjacent occupied buildings, and the small diameter and lower operating pressure minimize the potential for an accidental release that could lead to impacts to environmental resources or the local population. See additional discussion of requirements for emergency services in the Response to Comment I-26.

RESPONSE TO COMMENT I-27

The commentor believes that the power plant could represent a fire and explosion risk. While fire and explosion accidents have been recorded at power plants, such facilities are designed and operated in accordance

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occasion, similar power plants have experienced fires and explosions that have damaged property and killed people.

Just five days ago, or October 8th, 2002, a massive explosion at the Florida Power & Light natural gas fired Palm Beach plant rocked two counties, followed by a hydrogen-fed fire. The explosion shook houses and rattled windows, and was as loud as a sonic boom. In January, 2002, there was a hydrogen explosion and a resulting fire at the natural gas fired BC Hydro plant in Port Moody, BC.

Less than two weeks ago, on October 1, 2002, there was a nine-alarm fire at the Sithe power plant in Boston, that began in a hydrogen generator. The fire and explosion caused \$10 million in property damage.

The Plymouth Power DEIS does not apparently even mention the use of hydrogen at that plant, or list it as being stored, in the Section 3.6, Environmental Health. We understand that hydrogen is routinely used and stored at natural gas fired and other power plants similar to Plymouth Power, including but not limited to these three plants, that have blown up this year. But this potential impact from explosives and fires from caused or fed by hydrogen, and the impact on emergency services to respond, was not adequately discussed in the DEIS.

At the Sithe blaze, 180 firefighters had to respond. The natural gas fired turbine at the Doswell power plant in Virginia recently suffered an catastrophic fire and explosion. It took 75 fire fighters to quell the resulting fire. The DEIS should have discussed what will happen if hundreds of fire fighters are needed to respond to a problem at Plymouth Power.

There were other explosions and fires at power plants recently. An explosion and fire rocked the Black Hills Power and Light power plant in Wyoming, in June, 2002. A back-up generator blew up and caused a "major" fire at the Allegheny Energy plant in Pennsylvania, in July, 2002. Firefighters from at least five communities had to respond to the blaze. A pressure relief valve activation at the Mira plant in Zeeland, Michigan in August, 2002 caused diversion of traffic, to avoid released gasses. Three workers were killed at a fire in the O'Brien Newark, New Jersey Cogeneration power plant fire recently. At least 20 other fires have been recorded over the last 10 years at power plants, causing another death and \$417 million in property damage. The most severe fires often involved the release of lube oil, which ignited. Over 15,000 gallons of lube oil will be stored at Plymouth Power.⁵

There were 272 to 557 equipment failures and accidents per year at power boilers and pressure vessels since 1992, causing almost 200 injuries and 29 deaths, and another 145 to 387 failures, and another 270 injuries and 54 deaths, from unfired pressure vessels, according to Power Magazine, Jan-Feb., 2001, p 53.

⁵Most of these narratives are from the Chemical Safety Board's web site.

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(cont.)

with specialized building and operating codes to minimize the potential for such accidents. These codes require that the power plant include automatic systems to sense and alarm fires, and trigger fire suppression systems. In addition to these requirements, the PGF would also include a 2 million-gallon fire water tank, a firewater piping and hydrant system, a dedicated fire pump, and a backup diesel drive fire pump, all of which would be continuously available and periodically tested for readiness. All emergency response systems would be initiated automatically in case of emergency. Automatic control systems would shut down or isolate the systems. Relief valves would be installed as required to remove the chances of over pressurizing components. Section 2.2.3.11 of the Draft EIS, Plant Operating and Safety Systems, and Section 4.0 of the Draft EIS, Environmental Consultation, Review and Permitting also discusses these systems and required permits.

In addition to the safety systems, the location of the PGF in a rural area, approximately two and 2.5 miles away from the nearest local population centers of Plymouth, Washington and Umatilla, Oregon, respectively, decreases the chances for damage to population in case of emergency. No residential or other occupied structures would be located directly adjacent to the PGF (see Section 3.8.1.2.1 and Figure 3.8-1 in the Draft EIS). The nearest occupied buildings are scattered farm residences, and operating facilities within the Williams Compressor Station property. Given the rural nature of the site, the limited exposed population, the requirement for plant design under applicable safety codes and the safety systems to be constructed onsite, no significant impact to environmental resources or local population is expected to occur.

The commentor also requests clarification with regard to the onsite use and storage of hydrogen and lubricating oils representing a potential fire and explosion risk. As noted in Section 2.2.3.5 of the Draft EIS, both generators would be air-cooled, so the use and storage of hydrogen would be avoided. Lubricating oils would be stored in special containment that would include an automatically-initiating fire deluge system. See Section 2.2.3.11 in the Draft EIS for more information.

Because Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil, some of these hundreds of annual accidents at power plants cause injuries, and losses of life and property beyond the power plant boundaries, and require a large response of emergency personnel, as previously described. The dangers from the use and storage of these materials, and even the types of materials to be stored at Plymouth, and the ability or lack thereof of local fire departments to respond, was not discussed in the DEIS. These kinds of serious accidents are significant impacts that should be discussed in an EIS.

CUMULATIVE EFFECTS OF INCREASED USAGE OF NATURAL GAS

The EIS did not discuss the adverse impacts from the increased exploration and processing of gas in Canada, in part sparked by the development of these this project.

Discussions of Canadian impacts is mandated by Presidential findings during the Carter Administration regarding the scope of NEPA-covered projects. A description of Cross-border impacts are also appropriate, considering that the Canada Energy Board requires assessments of impacts in the United States, when evaluating proposals for Canadian pipelines.

Nor did the DEIS adequately discuss the cumulative impacts of this project and the many other power projects in the Northwest, on the natural gas supplies. Although this very topic was the subject of a chapter in the Wallula Power EIS, it received inadequate discussion in this document, even though the DEIS admitted that the cumulative impact of some of the recently proposed power plants in the Northwest, was the additional consumption of over 6% of domestic natural gas reserves.

PM-10

This plant will apparently emit 88 tons per year (TPY) of PM-10 from its turbines alone (Table B-2-2). PM-10 is fine particulate that is capable of being drawn deep into the lungs. PM-10 is highly damaging to human health. But in addition to the power plant exhaust, there are other sources of PM-10 and total suspended particulate (TSP) from this project, including the cooling tower. We do not see any proposed limits to control cooling tower PM emissions in the DEIS.

ADDITIONAL PM SOURCES

The DEIS also lacks adequate information to assure commentors that its calculations included the impact from formation of secondary PM by conversion of ammonia, nitrogen and sulfur compounds.

COOLING TOWER DRIFT

The cooling towers are PM-10 and TSP sources, to the degree which the cooling water contain solids, which are emitted from the cooling tower exhaust as particulate. A large power plant using water high in solids content can emit many tons per year of PM-10 and TSP. For instance the Goldendale Energy plant was predicted to emit 6.6 TPY of PM, and Plymouth Energy is 20%

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The plant would be designed and built in accordance with the latest codes and standards (1) to prevent an accident from occurring and (2) if an accident were to occur, to contain the damage of the accident. The plant would be as safe as current conditions allow. Unfortunately, all human endeavors have some risk, however slight, of accident. Although it is not possible to guarantee that an accident would never occur at the plant, it is possible to design, build and operate the plant to minimize the chances of an accident.

Section 3.12 of the Draft EIS discusses the availability of emergency response equipment locally, and response times for equipment and personnel available on a cooperative basis from the Tri-cities communities. As a rural area, local fire and emergency medical response service near Plymouth is limited to volunteers and equipment located in Plymouth and Patterson. Were a major incident to occur at the proposed power plant, personnel and equipment would be called from Tri-Cities, Hermiston and Umatilla under joint aid agreements.

The Williams Gas Pipeline Plymouth District offers an emergency response training class to fire districts, police and other emergency responders. The class covers the properties of natural gas under pressure and liquid natural gas, provides information about fire and flammable liquids, and discusses how to respond to emergencies. The day-long class is free of cost, offered each November at the Plymouth District, and includes lecture, discussion and hands-on response to fires. Emergency services personnel from throughout the Plymouth area have attended these training sessions. Most of the Fire District 6 firefighters have attended the training (Weaver 2003).

Reference:

Weaver, Jeremy, 2003. Telephone communication between Jeremy Weaver, Operations Technician 3, Williams Gas Pipeline – Plymouth Plant, and Betty Renkor, URS Corporation. January 6, 2003.

larger. The PM emissions from the cooling tower will contribute significantly to the ambient air concentrations of PM₁₀ concentrations. The effluents have low exit temperatures, low exit velocities and correspondingly are low in momentum and buoyancy. Switching to full air cooling would also reduce PM and TSP emissions, since a cooling tower will no longer be needed.

Cooling tower emissions also contain salts, metals, water treatment chemicals, and other contaminants, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

THE DEIS FAILED TO CONSIDER HOW AMMONIA SLIP WILL ADD TO PM10 EMISSIONS

The DEIS failed to describe the reactions between SO₃, NH₃, and NO₂, which form salts, some of which are emitted to the atmosphere and some of which deposit within the HRSG. Equations can be used to estimate a portion of the secondary PM₁₀ that is formed from ammonia slip. Secondary PM₁₀ can be formed by reaction of ammonia with SO₃ and NO₂ emitted by the gas turbines and present in the stack gases and plume as well as additional SO₃ and NO₂ that are present downwind in the atmosphere. Additional ammonium nitrate could form from the reaction of NO₂ in the atmosphere with any emitted ammonia. This additional PM₁₀ may not have been included in the Project's emissions estimates. Apparently the formation of secondary PM₁₀, ammonia nitrate, from the proposed project, was not done in the DEIS, so the combined PM₁₀ emissions will be more than what was estimated. BPA's own EIS on the Wallula Power project admitted ammonia emissions could produce as much as 460% of their own weight as secondary particulate.

In summary, the DEIS appears to have underestimated the resulting concentrations of PM₁₀ from the project. These underestimations need to be considered in light of the Federal Land Managers certifications that significance degradation of air quality in nearby Class I areas are already being exceeded. This certification by federal agencies of an already occurring significant impact, that will be increased by the proposed project, was not mentioned in the DEIS.

For these reasons, the subject of the health and environmental effects of PM-10 and the plant's contribution individually and cumulatively, should have been presented in depth. Many recently published studies demonstrate that PM-10 and TSP are far more harmful than previously considered. In one study of the Seattle area, days of high particulate concentrations in the air were correlated with increased hospital visits for asthma. In another series of similar studies, days of high particulate concentrations were correlated with days of high death rates in Santa Clara, California, Steubenville, Ohio, Birmingham, Alabama, and Philadelphia, Pennsylvania, among seven separate studies on this topic. Particulate have been recently, convincingly implicated in harm to pulmonary function.

Some important conclusions from these studies is that harmful health effects occur even when particulate concentrations are far, far below the legal limits, there is no apparent particulate threshold for adverse health effects, and that harmful health effects are apparently caused by very

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I-30
(cont.)

RESPONSE TO COMMENT I-28

Section 3.5.2.2.2 of the Draft EIS states that the PGF would be fueled by supplies of natural gas from the U.S. and Canada. According to the Applicant, the project does not have any long-term gas supply contracts that specify the development of specific gas fields in Canada or the U.S. The project would contract for gas supplies from the general gas commodity market and secure transportation of those supplies to the PGF project site via the Williams Pipeline Company gas transportation system. The Williams system interconnects with other natural gas transmission systems giving the PGF access to natural gas supplies throughout the U.S. and Canada. Because natural gas is a commodity, development of new reserves in all areas where reserves are known to exist is an ongoing occurrence independent of the demand for a fuel supply for the PGF. The development of gas reserves occurs as an independent action unrelated to the PGF, and therefore analysis of exploration and production impacts for future Canadian reserves is not warranted.

I-31

RESPONSE TO COMMENT I-29

Section 3.5.2.2 and Section 3.5.3 of the Draft EIS discuss natural gas consumed by the PFG in relation to national energy use. These sections also describe the projected fuel use for the PGF (using a conservative worst case analysis), and discuss natural gas consumption by the PGF relative to national consumption. Further, natural gas is a commodity where supplies (both reserves and production) have historically expanded in response to price. It can be expected that operation of the PGF could displace older more inefficient power plants, which would not result in an increase in the total demand for natural gas. If total demand were to increase by the small percentage represented by the PGF, the increase in demand would likely be absorbed by the ability of reserves to increase production. Section 3.5 in the Draft EIS describes the cumulative impacts of other gas-fired power plants in the general region of the proposed PGF and finds that no significant impact to gas supplies would occur.

minor increase in particulate concentrations. This means that even though the Project will not cause violations of the PM legal limits it could still cause significant health impacts. Construction will also create about 1 ton of TSP per acre of disturbance per month. Construction equipment, truck and car traffic related to this project, both in the construction and operation stage, will be an additional PM-10 and TSP source.

It appears from these studies that any increase in PM-10 and TSP levels will cause an adverse health impact. This is a significant health impact that should have been discussed in an EIS. There are important environmental impacts from PM-10 emissions, also.

PM₁₀ FORMATION CAUSES VISIBILITY REDUCTION

The fact that ammonia/PM reactions actually occur and cause visibility impacts is well documented in the technical literature. A noted atmospheric textbook, for example, contains this vivid description of the problem (Pitts and Pitts, 1999,⁶ p. 284):

"The formation of ammonium nitrate has some interesting implications for visibility reduction. In the Los Angeles air basin, for example, the major NO_x sources are at the western, upwind end of the air basin. Approximately 40 miles east in the vicinity of the BPA and Benton County of Chino, there is a large agricultural area that has significant emissions of ammonia...under typical meteorological conditions, air is carried inland during the day with NO_x being oxidized to HNO₃ as the air mass moves downwind. When it reaches the agricultural area, the HNO₃ reacts with gaseous NH₃ to form ammonium nitrate...the particles formed by such gas-to-particle conversion processes are in the size range where they scatter light efficiently, giving the appearance of a very hazy or smoggy atmosphere even though other manifestations of smog such as ozone levels may not be highly elevated."

AMMONIA RELATED PM₁₀ FORMATION ENDANGERS BIOTA

The majority of the ammonia slip reacts with NO_x to form ammonium nitrate, which is PM₁₀. This PM₁₀ can be deposited on surrounding hills, located immediately adjacent to the site. This is an especially significant impact, because prior studies demonstrate there is already a high level of ammonia compounds emitted in the vicinity of the project. The Federal Land Managers conducts the IMPROVE air monitoring project in the Columbia Gorge area. IMPROVE's results show that almost 40% of fine particulate in the Gorge vicinity is made up of ammonia compounds; ammonium sulfate and ammonium nitrate. These same ammonia compounds total 50-80% of the visibility-reducing air pollutants in the Gorge vicinity.⁷

⁶ Barbara J. Finlayson-Pitts and James N. Pitts, Jr., Chemistry of the Upper and Lower Atmosphere: Theory, Experiments, and Applications, Academic Press, San Diego, 1999.

⁷ Van Harem, Frank. WDOE Visibility Coordinator. "Visibility Monitoring Data Analysis for the CRGNSA, 9/96-8/97." Handout distributed at Columbia River Gorge Commission Meeting, April 13, 1999.

RESPONSE TO COMMENT I-30

I-31
(cont.)

The response to comment I-21 acknowledges that ammonia slip associated with the use of SCR for NO_x control contributes to additional particulate matter emissions. PM₁₀ emissions were calculated assuming the worst-case short-term emission rates (considering operating load and ambient temperature) that occur every hour of the year. This is a very conservative assumption because (1) all plants must shut down for occasional maintenance, (2) plants tend to emit pollutants at levels below the emission limits, and (3) because the worst-case short-term PM₁₀ emissions occur only during low temperatures and maximum operating load.

When determining emissions from a proposed stationary source, one considers only the pollutants in the stack. PM₁₀ formed by the interaction of ammonia with sulfates and nitrates in the HRSG was included in the proposed emission rates and was evaluated in the ISCST3 modeling conducted to evaluate local air quality impacts. However, just as ozone is not considered as an emitted pollutant for facilities that emit NO_x or VOCs, secondary aerosols formed in the atmosphere are not considered when determining PM₁₀ emissions.

Although not reflected in the PM₁₀ emission rates, the CALPUFF modeling used to evaluate regional impacts does consider the formation of secondary particulate matter from ammonia reacting with sulfates and nitrates in the atmosphere downwind of PGF. Even with consideration of secondary aerosol formation, predicted concentrations were found to be far below ambient air quality standards established to protect human health and welfare. Because the formation of secondary PM₁₀ takes time, the secondary aerosol contribution to total PM₁₀ concentrations increases with distance from the source. Thus, secondary aerosol formation is generally less important locally than on a regional basis.

The Notice of Construction air quality permit application submitted to Benton Clean Air Authority identifies a potential particulate matter emission rate of 0.087 pounds per hour (0.38 tons per year) from the cooling tower. Because this emission rate is negligible in comparison with the 20 pound per hour emission rate associated with the combustion

I-32

I-33

This additional PM₁₀ would increase the Project's reported contribution to soil nitrogen. The impact of this additional ammonium nitrate has not been evaluated and must be to fully evaluate the environmental impacts of SCR. Ammonia emissions are discussed further in the following comments. These types of reactions, as described above, are a potentially significant impact that should have been discussed in the DEIS.

AMMONIA

The proposed power plant will use, handle, store and transport large amounts of ammonia. Ammonia is listed on the EPA's list of extremely hazardous chemicals. The State of Louisiana has recently tightened regulations governing handling of ammonia. It is prudent to minimize the use and storage of any hazardous chemicals such as ammonia. Nonetheless, Plymouth Power proposes to transport, use and store large quantities of ammonia on site.

The DEIS is deficient in failing to describe and address the possible consequences of transporting, piping, storing and emitting hundreds of thousands of pounds of ammonia at this facility every year. There are two issues regarding ammonia. The first issue is the constant release of ammonia from this facility under normal operating conditions. The second issue is the risk of ammonia releases from the storage and transportation of this hazardous chemical.

AMMONIA EMISSIONS UNDER NORMAL OPERATING CONDITIONS

Ammonia may be emitted from the project at 5 parts per million (ppm) which is one-half of the odor threshold. There are other ammonia sources in this area, including feed lots and fertilizer production facilities, and agricultural users of nitrogen based fertilizer, whose applications could contribute to an ambient ammonia level. These other ammonia sources were not evaluated in the DEIS. In this case it is possible that the ammonia odor threshold could be exceeded under adverse air quality mixing conditions, such as inversions. These nearby ammonia sources should have been inventoried, because those sources may cumulatively contribute to formation of secondary particulate.

But no controls for ammonia are discussed, nor is there any modeling that accounts for potential ambient levels of ammonia that would cumulatively join with the proposed facility's emissions. The impacts of ammonia emissions on PM formation were discussed earlier.

RISKS OF AMMONIA RELEASES

The plant will store hundreds of thousand of pounds of ammonia on site, and millions of pounds of ammonia will be transported to this site every year. But the DEIS does not describe the likelihood of a transportation accident, the numbers of truck trips bearing ammonia, the possible size of any ammonia releases from a truck accident, the inability of this rural area's emergency response system to react to a large release, the neighborhoods and businesses that would be threatened by a release or the risk and effects of a release from the ammonia tanks at the power plant, including the risk and effect of a tank failure.

I-33
(cont.)

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turbine, it was not included in the modeling. Furthermore, the particulate matter associated with dissolved solids in the local water supply is emitted from the cooling tower in droplets. These droplets are much larger than 10 microns and usually cause the particulate matter to deposit on the ground very near the cooling tower. Consequently, we disagree with the contention that the cooling tower would contribute significantly to ambient PM₁₀ concentrations.

RESPONSE TO COMMENT I-31

Even at the worst-case location, PM₁₀ concentrations attributable to emissions of PM₁₀ from PGF are only small fractions of ambient air quality standards established to protect human health. The commentor also appears to have incorrectly assumed that PM₁₀ emissions from the facility were underestimated. In fact, actual emissions are expected to be considerably lower than those proposed as permit limits because plant operators would always maintain a margin of safety below the permit limits. In addition, the plant would not always operate at full capacity and must shut down for maintenance periodically.

As indicated in the response to Comment I-30, emissions were calculated according to federal, state, and local procedures. That response also acknowledges that additional particulate matter is formed in the atmosphere, sometimes far downwind of the power plant. However, CALPUFF was used to evaluate the secondary aerosol formation, and the results indicate concentrations far below ambient air quality standards established to protect human health and welfare.

RESPONSE TO COMMENT I-32

Secondary PM₁₀ formation related to the interaction of ammonia with sulfates and nitrates in the PGF plume were considered in the CALPUFF evaluation of visibility impacts. See also Responses to Comments A-1, A-2, A-3, I-20, I-29 and I-30.

In fact, the DEIS is virtually silent on this troubling subject, of large scale ammonia releases from transport and storage of large amounts of ammonia on the site, and how, or whether, emergency responses will be conducted. Ammonia releases are fairly common. A study submitted to the Congress revealed there have been over 1000 ammonia releases over one nine year period, which caused 801 injuries, 9 deaths, and 61 evacuations of over 22,000 people. *

For instance, There was a release of ammonia in August, 2001 from the Pratt & Whitney power plant in East Hartford, Conn., that caused the shutdown of nearby streets for five hours and led to the evacuation of 20 people. For this reason the commentators urge that the DEIS should have discuss ammonia hazards, and the ability to respond, from storage and transport releases, and any requirements to comply with the CAA amendments governing storage and transport of ammonia and other hazardous materials.

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

The DEIS evaluation should also study alternatives on the types of ammonia to be stored and used, for instance the use of urea instead of ammonia, and alternative transport methods for ammonia. While the DEIS suggest that aqueous rather than anhydrous ammonia may be used, urea would be even safer, and anhydrous ammonia should be specifically banned from use because of the increased dangers from its releases.

The DEIS' evaluation should also study the potential impacts of large scale ammonia releases from different site locations, and the release impacts from different types of transport accidents. The alternative of siting the plant farther from populated areas and from the State Highway, to reduce the public's exposure from ammonia releases, should have been discussed.

SOME RECENT RELEASES OF AMMONIA (not a complete list)

evacuations	injuries	location	gallons released
36	1300	Minot, ND	about 140,000
280	4	Washington, IND	Not provided
1000	65	Quebec	" "
1500	0	Morro Bay, CA	300
100-300	n/a	Wauwatosa, WI	n/a
100	n/a	Columbus, IA	na

*Report to Congress Section 112(r) (10) Clean Air Act as Amended. EPA 550-r-93-002. December, 1993.

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(cont.)

RESPONSE TO COMMENT I-33

In Responses to Comments A-2 and A-9, the Applicant evaluated total nitrogen deposition, including NO_x, nitrates, and ammonia. Table A-2-1 in Response to Comment A-2 shows that total nitrogen deposition attributable to PGF in the Class I areas and special areas such as CRGNSA would be very small with respect to established nitrogen deposition criteria and existing background deposition rates.

RESPONSE TO COMMENT I-34

The risks associated with the proposed use of aqueous ammonia (a 19 percent solution of ammonia in water) are much lower than those associated with anhydrous (gaseous) ammonia. Virtually all of the hazards identified in Comment I-33 are associated with the use of anhydrous ammonia. As noted in the Notice of Construction air permit application, sources (such as PGF) employing ammonia in a 19 percent (or lower) solution are exempt from EPA's Risk Management Program because the risks are low. As suggested by the commentator, the proponents of PGF are seriously considering the use of urea as an alternative to aqueous ammonia.

Ammonia emissions from the exhaust stack were evaluated in the dispersion modeling analysis. This analysis determined that the maximum ammonia concentration attributable to the PGF would be only five percent of Washington's Acceptable Source Impact Levels. Consequently, no adverse impacts from ammonia would occur. Note that while the concentration of ammonia in the stack may be up to 5 ppm, predicted concentrations off-site are far below the odor threshold for ammonia. See also Response to Comment I-20.

RESPONSE TO COMMENT I-35

Water treatment chemicals would be used in two areas of the power plant: (1) water purification of boiler feedwater, and (2) water treatment of cooling tower circulating water. Chemicals expected to be used in these two processes include:

not known	15	St. Paul, MN	not provided
not known	9	Lorain, Ohio	10 pounds
230	5	Old Monroe, MO	not known

IMPACTS FROM WATER DISCHARGES

The DEIS does not list water treatment chemicals to be used at the plant, and does not list any details of the toxicity of inhibitors or algicides that would be discharged. Lacking a complete discussion of the possibly pollutants in these sources's discharge, it is not possible to conclude that the this source's waste water will not contribute to water treatment problems. These chemicals could also be discharged in the cooling tower discharges.

GLOBAL WARMING

The DEIS admits that the facility will emit large amounts of carbon dioxide, which is a greenhouse gas. But the DEIS fails to discuss possible mitigation for the carbon dioxide emissions, and also fails to evaluate the contribution made by the plant's massive steam discharges to global warming. Heated water vapor is widely recognized as a contributor to the global warming problem.⁹ A change to air cooling would also eliminate this discharge of water vapor, thus partly mitigating the facility's greenhouse gas emissions.

This source will not mitigate its CO₂ emissions. This plant's large emissions of CO₂ and other greenhouse gasses are an unmitigated, potentially significant impact.

SOLID WASTES

Water treatment for a large power plant can generate as much as 10 tons per month of wastes, as backwash, or filter cake. There are other waste streams, including spent catalyst, which is a hazardous waste. Catalyst wastes could be avoided by use of the SCONOX scrubber system. This generation of wastes was never described adequately in the DEIS. The materials contained in this wastes, the amount to be produced, its destiny, and its impacts on landfill capacity should all have been discussed.

STORMWATER RUNOFF AND SPILLS

The project will include the creation of impervious surfaces. This will cause the generation of millions of gallons of storm water runoff. This water will be tainted with oil, grease, and other contaminants present on the site and its parking lot and roof. The DEIS did not describe adequately the quality of this runoff, its destiny, and its potential impacts on nearby wetlands and surface waters. While there would be unlined detention ponds the DEIS did not describe to what degree these ponds will treat the storm water to remove pollutants before it is allowed to infiltrate

⁹ California Energy Commission, 1991.

Boiler Feedwater Water Treatment:

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(cont.)

- inorganic sodium phosphate (food grade material) in the 10 to 20 mg/L range,
- ammonium hydroxide less than 1.0 mg/L, and
- diethyl-hydroxyl amine 0.010 mg/L.

Cooling Tower Water Treatment:

I-36

- inorganic phosphate at the 4 to 6 mg/L level,
- 1-hydroxyethylidene-1,1-diphosphonic acid (a common cooling water inhibitor) at 1 to 2 mg/L,

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- acrylate copolymer BF Goodrich K-775 (also a common cooling water inhibitor) at the 4 to 6 mg/L level,

I-36
(cont.)

- sodium hypochlorite biocide to maintain a free chlorine residual of 0.3 mg/L, and

I-38

- sulfuric acid to maintain a pH of 7.8 to 8.2.

The boiler feedwater water treatment system would include transportable elements and would be operated by a vendor. All water treatment wastes would be removed from the power plant site by the water treatment vendor.

The cooling tower wastewater treatment will be as described in Section 2.2.6 of the Draft EIS. Cooling water blowdown would be blended with fresh water to obtain suitable irrigation water. Depending on the number of cycles of concentration, the cooling tower wastewater would be diluted up to 25 times with fresh water in order to meet irrigation standards.

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RESPONSE TO COMMENT I-36

Section 3.14.3 of the Draft EIS discusses global warming and the potential for CO₂ emissions to contribute to global warming. Although the PGF could emit up to 983,000 tons of CO₂ per year, the Draft EIS explains that the construction and operation of the PGF will not necessarily result in an increase in overall CO₂ emissions.

into the ground water.

While an oil/water separator will be present, the DEIS did not assure commentors about the degree to which stormwater will be channelized through the separator. Nor did the DEIS describe the fate of wastes that are separated from the storm water. The DEIS did not describe the project's compliance with the DOE Stormwater Management rules. For instance, use of oil/water separators is actually criticized as having limited application, in DOE guidance manuals. The DEIS did not describe why a separator was appropriate for this location, or why alternative methods of storm water pollution control were not used.¹⁰

LEGIONNAIRES DISEASE

The DEIS did not provide a table of materials stored on site that listed biocides known to be effective against Legionnaires Disease. This disease breeds in moist, warm climates, including cooling towers such as those to be used by Plymouth. It has been spread through the discharge of steam from cooling towers. In March, 2001, for instance, two Ford employees died in Ohio after exposure to Legionnaires' Disease, spread by the facility's industrial cooling towers. Legionnaires Disease organisms have also been found in the CEGB power plant's cooling tower water, near Stafford, England. Since it is not apparent that Plymouth plans to use appropriate chemical treatment of its cooling tower system to stifle development of the relevant bacteria, there is a threat of Legionnaires Disease from this facility. This should be discussed in a revised DEIS.

POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)

The alternative of burying power lines associated with this project should have been discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of these projects, and may reduce EMF exposure. EMF exposure is another potentially significant impact that was not discussed in the DEIS.

POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)

This project will include a new power line of .6 miles, or a rebuild of the PUD lines. The alternative of burying power lines associated with this project should have been discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of these projects, and may reduce EMF exposure, and the impacts to avian species which collide with above ground power lines. Bird Mortality from the new power lines and EMF exposure are other potentially significant impacts that should have been discussed in the DEIS, and power line burial should be discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas.

The power lines associated with this project, as currently proposed, are acknowledged as a potentially significant factor because of the possible congestion at McNary substation, according

¹⁰Department of Ecology, Stormwater Management Manual, Chapter III-7, #91-75.

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Electricity demand in the United States is met through a combination of resources. To the extent that electricity demand is met by fossil fuel-fired generation, the use of electricity results in the emission of greenhouse gases. However, different types of electrical generating technologies produce different amounts of greenhouse gases per kilowatt hour of electricity generated. In the United States, coal-fired generation produces an average of 2.10 lbs of CO₂ per kWh, oil-fired generation produces an average of 1.97 lbs of CO₂ per kWh, and natural-gas fired generation produces an average of 1.32 lbs of CO₂ per kWh. (DOE/EPA 2000.) In contrast, the type of highly efficient combined cycle technology that will be used at the PGF produces only about 0.85 lbs of CO₂ per kilowatt hour of electricity generated.

If electricity demand is met by the PGF instead of by less efficient gas, oil or coal fired power plants, the operation of PGF will actually have the effect of reducing the overall emission of CO₂. For this reason, virtually every major authority on global warming recommends the increased reliance on more efficient energy generating technology. In particular, they advocate increased reliance on the technology used in the PGF project – natural gas-fired combined cycle combustion turbine generating technology – as a critical near term strategy for reducing greenhouse gas emissions. (IEA 2001; DOE/EPA 2000; EAI 1998; Montgomery 2001.) The Intergovernmental Panel on Climate Change, for example, concluded that, in the near term, increased reliance upon natural gas and combined cycle technology “will play an important role in emission reduction.” (IPCC 2001.)

Accordingly, it would not be appropriate to require the PGF to mitigate its CO₂ emissions. Without a broad-based statutory or regulatory policy that requires all electrical generating facilities to mitigate their CO₂ emissions, requiring an individual new facility, such as the PGF, to mitigate its emissions would only serve to discourage the transition to newer technology that generates electricity with much lower CO₂ emissions.

to page I-38 in the Wallula FEIS. The DEIS should have addressed to what degree power line burial would address this concern.

There are many examples of burial of high voltage power lines of considerable length. Since the proposed lines are about 3000 feet long, burial of this line would reduce the visual impact of the project would protect avian species, would reduce the project's above ground "footprint," and would add only about 1/10% of one percent to the project costs; about \$500,000.

Some example of actual and proposed burials of large pipeline include the 345 kV line that would be buried for 1700 feet to go under the Namekagon River near Trego, Wisconsin.

Sierra Pacific is burying a 14,000 volt line for about 2000 feet near downtown (Lake) Tahoe City, according to the company's June 9, 1999 press release.

Sierra Pacific is also burying a 120,000 volt (120kV) line for about 1700 feet near Carson City, Nevada, according to the company's April 19, 1999 press release.

Sierra Pacific's longest underground line is 2.6 miles, according to their Media Relations department.

The California Public Utility Commission's consultants, Aspen Environmental, prepared a study of an all-underground route for a 230 kV line near Pleasanton, California (Pleasanton Weekly. "Objectors, Proponents speak out on PG&E Power Line Plan." 2/16/01)

The Sumas II Power Plant has proposed a buried 230 kV line for 1.4 miles, in Abbotsford, Canada, as part of its trans-border proposal. (Canada Newswire. "NSB Receives a Revised DEIS from Sumas Energy II to Construct an International Power Line." October 2000)

The Sargent & Lundy engineering firm's advertising materials list several underground transmission lines for which they provided engineering, including a 115/138-kV line, a 230 kV line in Washington Dc, a 1800 foot 115-kV line in Baltimore, five 230-kV lines in China, two 69 kV lines in Iowa, a 1300 foot 138-kV line in Tennessee, and a one-mile, 138-kV line in Salt Lake City.

This litany of buried transmission lines indicates that this is a practicable, feasible and economic alternative design for this portion of the project. It would reduce the visual and land use impact of the project. For this reason a burial alternative, should have been presented in the DEIS.

I-41
(cont.)

References:

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IEA 2001. *Energy Technology and Climate Change: A Call to Action*. International Energy Agency.

IPCC 2001. *Technical Summary, Climate Change 2001: Mitigation*. Intergovernmental Panel on Climate Change.

Montgomery, W. David, 2001. Prefiled Testimony submitted to the Washington Energy Facility Site Evaluation Council. *In re Application No. 99-1*. 2001.

RESPONSE TO COMMENT I-37

During normal operation of the PGF, there would be no significant steam releases from PGF. Water vapor and droplets would emit from the cooling tower, but to the Applicant's knowledge, no studies exist that suggest that this would be a significant contributor to global warming.

RESPONSE TO COMMENT I-38

The primary source of solid waste from a natural gas-fired power plant with Selective Catalytic Reduction (SCR) air emission control systems are sludges generated by the water treatment system and spent catalyst from the SCR. Other wastes generated in very small quantities include paper, food and packaging waste from plant personnel and solvents, paint and lubricating oil wastes from plant maintenance. The largest waste by volume is typically water treatment waste. The PGF water treatment system would be a vendor-supplied system that would include components that would be periodically removed from the site, cleaned, re-charged and returned. Any water treatment sludges would be removed by the vendor and disposed offsite through the vendors operation.

Maintenance wastes, including some hazardous materials, would be removed and disposed offsite by the maintenance contractor. Similarly, spent catalyst from the SCR, which is removed periodically, is also a hazardous waste and would be removed by the SCR maintenance contractor. Since none of these wastes would be stored on site and all would be handled by qualified vendors, minimal risk of these wastes being released at the site exists and no significant impact from their presence is expected.

RESPONSE TO COMMENT I-39

Conceptual site design includes approximately 1.89 acres of impervious surfaces (building and HRSG roofs, the small parking lot and site roads) that would produce storm water runoff during storm events. A maximum storm water runoff during any single event is expected to be 0.82 acre-feet (compared to a storm water pond capacity on the order of 3 acre-feet). Storm water would be collected and directed to the storm water pond (see Figure 2-4 in the Draft EIS) as described in Section 2.2.3.9.4 of the Draft EIS. Areas exposed to storm water runoff would not contain materials that present potential contamination of surface water through runoff. PGF will obtain an Industrial Storm Water Discharge Permit from the state Department of Ecology, which requires compliance with the state's most recent storm water runoff system requirements.

RESPONSE TO COMMENT I-40

Legionnaires disease can be caused by bacteria formed in untreated cooling water used in cooling tower applications. Air drawn through the cooling tower and recirculated to populated interior building spaces as part of a building air conditioning system has been the source of the most publicized outbreaks of Legionnaires disease. As described in Section 2.2.3.6.2 of the Draft EIS, the PGF would utilize a biocide (sodium hypochloride) in the cooling water to destroy organic material, including those bacteria identified with Legionnaires disease, eliminating the risk of contamination. Also, in the case of the PGF, cooling tower draft air would be released to the atmosphere, not to an interior building space,

which would significantly mitigate the available pathway for potential contamination.

RESPONSE TO COMMENT I-41

No significant environmental impacts associated with the construction or operation of the preferred or alternative transmission line interconnections were identified. Overhead transmission lines permit the continued use of the land for farming (farming can occur under the line), whereas undergrounding transmission lines may require restricting surface use of the land. Further, like overhead transmission lines, underground transmission lines also generate electromagnetic fields. However, these fields degrade rapidly with distance from the electrical conductors and do not place local populations of workers at risk. A review of the current literature concerning electromagnetic fields can be found in Appendix F of the Wallula Power Project and Wallula-McNary Transmission Line Draft Environmental Impact Statement (DEO/EIS-330) released in February 2002.

The visual impacts resulting from overhead transmission line were analyzed and found not to be significant (see Sections 2.9.2.5, 3.9.2.3.2, and 3.9.2.4 of the Draft EIS).

**PLYMOUTH ENERGY PROJECT
I'D LIKE TO TELL YOU. . .**

1. I THINK THE ENVIRONMENTAL ANALYSIS WOULD BE BETTER IF:

2. OTHER ENVIRONMENTAL RESOURCES YOU SHOULD CONSIDER:

3. PLEASE CONSIDER THESE IDEAS FOR LESSENING IMPACTS:

4. I HAVE THESE OTHER COMMENTS:

I-42

(If you need more space please use the back.)

- ☒ Please put me on your project mailing list. (You are already on the mailing list if you received a letter or the Plymouth Generating DEIS in the mail.)

Name Jaime and Betha Ramon

Address PO Box 169

Plymouth WA 99346

Please mail your comments by **October 15, 2002**
Benton County Planning Department
P O Box 910
Prosser, WA 99350

RESPONSE TO COMMENT I-42

A copy of the Draft EIS was mailed to the commentor and the commentor was added to the Distribution List for the Final EIS.